

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A servo information write method, comprising:

a first step of positioning an actuator on which a composite head containing a read head and a write head is mounted while said actuator is in contact with a crash stop, and causing the write head to write a servo pattern, a trigger pattern, and a propagation pattern onto a disk-type storage medium, wherein said trigger pattern includes a sync mark; and

a second step of, when said servo pattern written on said disk-type storage medium by said write head can be detected by said read head, positioning said write head by means of servo control based on detected said servo pattern and causing said write head to further write a servo pattern and a propagation pattern onto the disk-type storage medium; and

a third step of determining a write time interval between the instant at which said read head detects said trigger pattern written on said disk-type storage medium and the instant at which said write head writes a next trigger pattern onto the disk-type storage medium, wherein said third step causes said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 2. (original) The servo information write method according to claim 1, wherein said first step varies the amount of current flow to a drive motor for said actuator while the actuator is in contact with said crash stop.

Claim 3. (original) The servo information write method according to claim 1, wherein said second step causes said read head to detect said propagation pattern written on said disk-type storage medium and corrects the position of said write head in accordance with the detected propagation pattern.

Claim 4 (original) The servo information write method according to claim 1, further comprising the step of determining a feed pitch for writing a trigger pattern onto said disk-type storage medium.

Claim 5. (canceled)

Claim 6. (currently amended) The servo information write method according to claim 5 1, wherein said write time interval determination step uses a read/write offset which is the distance between said read head and said write head.

Claim 7. (canceled)

Claim 8. (currently amended) A servo information write method for writing servo information onto a disk-type storage medium by using a composite head containing a read head and a write head, the servo information write method comprising the steps of:

writing, by said write head, a trigger pattern, a servo pattern, and a propagation pattern onto said disk-type storage medium, wherein said trigger pattern includes a sync pattern;
and

detecting, by said read head, said servo pattern written on said disk-type storage medium, and positioning said write head at the next write position in accordance with the detected servo pattern; and

determining a write time interval between an instant at which said read head detects said trigger pattern written on said disk-type storage medium and an instant at which said write head writes a next trigger pattern onto the disk-type storage medium, said determining causing the read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 9. (original) The servo information write method according to claim 8, further comprising the step of detecting, by said read head, said propagation pattern

written on said disk-type storage medium, and correcting the position of said write head in accordance with the detected propagation pattern.

Claim 10. (original) The servo information write method according to claim 8, wherein said trigger pattern and said servo pattern are to be written in a position information storage area of said disk-type storage medium, and wherein said propagation pattern is to be written in a data storage area of the disk-type storage medium.

Claim 11. (currently amended) A servo information write method for writing servo information onto disk-type storage medium by using a composite head containing a read head and a write head, the servo information write method comprising the steps of:

writing, by said write head, a trigger pattern onto said disk-type storage medium; and

determining a write time interval between the instant at which said read head detects said trigger pattern written on said disk-type storage medium and the instant at which said write head writes the next trigger pattern onto the disk-type storage medium, wherein said time interval determination step causes said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 12. (original) The servo information write method according to claim 11, wherein said write time interval determination step uses a read/write offset between said read head and said write head.

Claim 13. (canceled)

Claim 14. (currently amended) A servo control method for positioning a composite head containing a read head and a write head at a specified position on a disk-type storage medium, the servo control method comprising:

a first step of detecting, by said read head, a servo pattern written on said disk-type storage medium; and

a second step of converting a position error signal of the detected servo pattern into a physical position on said disk-type storage medium; and

a third step of determining a write time interval between the instant at which said read head detects a trigger pattern written on said disk-type storage medium and the instant at which said write head writes a next trigger pattern onto the disk-type storage medium, wherein said third step causes said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 15. (original) The servo control method according to claim 14, wherein said second step uses a read/write offset which is the distance between said read head and said write head.

Claim 16. (original) The servo control method according to claim 14, wherein said second step writes, by said write head, a measurement pattern at a position other than the position for said servo pattern on said disk-type storage medium; detects, by said read head, a profile of said measurement pattern written on said disk-type storage medium; and linearizes the relationship between said position error signal and the position of said read head in accordance with the detected measurement pattern.

Claim 17. (currently amended) A data storage device, comprising:

a first servo write means for positioning an actuator on which a composite head containing a read head and a write head is mounted while said actuator is in contact with a crash stop, and causing the write head to write a servo pattern, a trigger pattern, and a propagation pattern onto a disk-type storage medium, wherein said trigger pattern includes a sync mark; and

a second servo write means for, when said servo pattern written on said disk-type storage medium by said write head can be detected by said read head, positioning said write head by means of servo control based on the detected servo pattern and causing the write head to further write a servo pattern and a propagation pattern onto the disk-type storage medium; and

a third step of determining a write time interval between the instant at which said read head detects said trigger pattern written on said disk-type storage medium and the instant at

which said write head writes a next trigger pattern onto the disk-type storage medium, wherein said third step causes said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 18. (original) The data storage device according to claim 17, further comprising a correction means for, while said second servo write means is writing a servo pattern and a propagation pattern, causing said read head to detect said propagation pattern written on said disk-type storage medium and correcting the position of said write head in accordance with the detected propagation pattern.

Claim 19. (currently amended) A data storage device, comprising:
a write means for causing a write head to write a trigger pattern onto a disk-type storage medium; and
a determination means for determining a write time interval between the instant at which said read head detects said trigger pattern written on said disk-type storage medium and the instant at which said write head writes the next trigger pattern onto the disk-type storage medium, said determination means causing said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 20. (original) The data storage device according to claim 19, wherein said determination means uses a read/write offset between said read head and said write head.

Claim 21. (canceled)

Claim 22. (currently amended) A data storage device, comprising:
a disk-type storage medium which is positioned in a revolvable manner and provided with a surface storing a servo pattern;
a read head which is positioned so as to be capable of reading said servo pattern;

a write head positioned at a predetermined distance from said read head and used to write data onto said disk-type storage medium, wherein said servo pattern is written by said write head;

a converter for converting a position error signal of said servo pattern read by said read head into a physical position on said disk-type storage medium; and

a controller for controlling the position of said read head in accordance with the conversion result produced by said converter,

wherein said data storage device determines a write time interval between the instant at which said read head detects a trigger pattern written on said disk-type storage medium and the instant at which said write head writes a next trigger pattern onto the disk-type storage medium, wherein said read head detects a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 23. (canceled)

Claim 24. (original) The data storage device according to claim 22, wherein said read head consists of a magnetoresistive device and said write head consists of a transducer induction device.

Claim 25. (currently amended) A program enabling a computer to exercise a first function for positioning an actuator on which a composite head containing a read head and a write head is mounted while said actuator is in contact with a crash stop and causing the write head to write a servo pattern, a trigger pattern, and a propagation pattern onto a disk-type storage medium, ~~and~~ a second function for, when said servo pattern written on said disk-type storage medium by said write head can be detected by said read head, positioning said write head by means of servo control based on the detected servo pattern and causing the write head to further write a servo pattern and a propagation pattern onto the disk-type storage medium, and a third function for determining a write time interval between the instant at which said read head detects said trigger pattern written on said disk-type storage medium and the instant at which said write head writes the next trigger pattern onto the disk-type storage medium, wherein said third

function causes said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 26. (original) The program according to claim 25, further including a function for determining a feed pitch for writing said trigger pattern onto said disk-type storage medium.

Claim 27. (canceled)

Claim 28. (currently amended) A program enabling a computer to exercise a first function for writing a trigger pattern, a servo pattern, and a propagation pattern onto a disk-type storage medium; ~~and~~ a second function for causing said read head to detect said servo pattern written on said disk-type storage medium and positioning said write head at the next write position in accordance with the detected servo pattern, and a third function for determining a write time interval between the instant at which said read head detects said trigger pattern written on said disk-type storage medium and the instant at which said write head writes the next trigger pattern onto the disk-type storage medium, wherein said third function causes said read head to detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 29. (original) The program according to claim 28, further including a function for causing said read head to detect said propagation pattern written on said disk-type storage medium and correcting the position of said write head.

Claim 30. (currently amended) A program enabling a computer to exercise a function for causing a write head to write a trigger pattern onto a disk-type storage medium and a function for determining a write time interval between the instant at which a read head detects said trigger pattern written on said disk-type storage medium in accordance with the detected propagation pattern and the instant at which said write head writes the next trigger pattern onto the disk-type storage medium, wherein said function for determining causes said read head to

detect a time difference between trigger patterns written onto radially adjacent tracks of said disk-type storage medium.

Claim 31. (canceled)